

**(C) AMENDMENTS TO THE CLAIMS:**

14. (amendment) A position and orientation sensor, comprising:

a physical alignment target attached to an object having a first optical feature a fixed distance from a second optical feature;

a single imaging device that can form an optical image of said physical alignment target with said first optical feature in-focus at a distinct location and size in said image and said second optical feature out-of-focus at a distinct location and size in said image;

whereby differences in said location and size of said first optical feature in said optical image and said location and size of said second optical feature in said optical image are measurements of up to three orthogonal positions and up to three orthogonal orientations of said physical alignment target with respect to said imaging device.

15. (amendment) The sensor of claim 14 wherein one or more of said optical features is a cross hair.

16. (unchanged) The sensor of claim 14 wherein said imaging device comprises a lens and a transparent projection screen.

17. (unchanged) The sensor of claim 14 wherein said imaging device is a camera.

18.(unchanged) The sensor of claim 14 further including a monitor connected to said imaging device.

19.(unchanged) The sensor of claim 14 further including a computer connected to said imaging device.